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## SUBJECT OF INVESTIGATION

THE STUDY  
ON  
THE PATHOGENESIS  
OF  
INTESTINAL INFECTIONS

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The Study  
on  
The Pathogenesis  
of  
Intestinal Infections

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✓ In this quarterly report, an outbreak of gastroenteritis due to the infection due to salmonella thompson is mentioned.

Eleven patients, who were diagnosed as bacillary dysentery, were admitted to Tokyo Municipal Komagome Hospital on 27th June 1963. However, Salmonella Thompson was isolated from stool cultures of those patients instead of dysentery bacillus. Clinical pictures of those cases were different from those of patients with bacillary dysentery. Sigmoidoscopically, findings of rectal and sigmoidal mucuous membranes were quite different from those seen in cases of bacillary dysentery.

Patients were all female, and they lived in a boarding house of a dressmaking store. Age distribution was 17 to 24 years.

In nine cases among eleven patients, onset of the illness was 27th June, in only two cases, night of 26th June. (TABLE A)

As the first sign of the disease, six patients had abdominal pain, and five diarrhoe. On the first day of the illness, most patients complained headache and abdominal pain, and at the same time they had two to eight time diarrhoe. Nausea or vomiting was found each in only one case. Body temperature over than 38°C was seen in only three cases; in five cases no attack of fever was proved on the first day. Only one patient felt chill.

The character of stools was liquid, semi-liquid or soft; in some cases, mucus was found in stools, but no pus nor blood was seen.

In the majority of cases, subjective symptoms were mild, except a few patients who complained severe abdominal pain.

These patients were admitted to our hospital on the first or second day of the illness.

During the period of hospitalization, the daily maximum frequency of stools was over than ten times in two cases, five to ten times in five cases, and less than four times in four cases.

It was noted, that fever rose to the maximum temperature on the second or third day of the illness in the majority of patients. The maximum temperature over than 38°C was seen in eight cases, 37.5°C in two cases, and normal temperature in one case.

In the majority of patients, fever subsided and numbers of stools decreased within one to two days after administration of antibiotic or without specific treatment. However, the recovery of character of stool was seen a little later.

The sigmoidoscopic examinations were carried out in every patients. The mucous membrane of the sigmoid and rectum revealed a quite normal appearance in the majority of cases, and a slight grade of congestion and turbidity was found in a few cases.

The bacteriological investigations were carried out on stool cultures every day in eight cases and every two or three days in three cases. Results of stool cultures are indicated in Table B. In ten among eleven cases, *Salmonella* Thompson was isolated. Only one patient excreted no organism despite of daily stool cultures during the hospitalization. In the majority of patients, stool culture remained positive over than one week. Reappearance of bacilli in stool was found in half of these cases.

Symptoms of the patients in this outbreak were those of enteritis; however, some characteristic points were noted in these cases.

In typical cases of the infection due to *salmonella*, initial clinical signs begin with chill, fever, nausea, vomiting, abdominal pain and diarrhoe. Nevertheless, in the majority of the cases, chill, fever and nausea lacked on the first day of illness. The first sign was abdominal pain or diarrhoe. For the reason why initial symptoms were characteristic, it would be presumed, that this foodpoisoning due to *Salmonella* Thompson may be not infection by this

organism, but intoxication by its toxin, and following to the intoxication, infection may begin. The fact, that antibiotic was not so effective as in cases of bacillary dysentery, may be profitable for this presumption.

The sigmoidoscopic examination facilitate the diagnosis to differentiate salmonella infections from bacillary dysentery.

Patient	Age	Onset of Illness	Clinical Signs seen on the First Day of the Illness							Symptoms after Admission		
			Headache	Chill	Abdominal Pain	Nausea	Vomiting	Diarrhoe	Body Temperature	Maximum Temp.	Stools (Max. Frequency and Character)	
1	22	27 7AM	+	+	+	-	-	8	38.2	39.3	11 watery	
2	18	26 9PM	+	-	+	-	-	8	38.1	38.4	12 watery	
3	21	27 7AM	-	-	+	-	-	6	38.3	38.3	7 loosy, mucus	
4	18	27 2PM	-	-	+	-	-	1	36.6		3 loosy	
5	17	27 9AM	+	-	+	+	-	1	/	39.2	9 loosy	
6	18	27 8AM	+	-	+	-	-	3	/	38.3	5 soft, mucus	
7	18	26 night	+	-	+	-	-	3	/	38.3	6 watery	
8	18	27 5AM	+	-	+	-	-	3	/	37.5	3 watery	
9	24	27 PM	-	-	-	-	-	2	37.3	37.5	2 watery	
10	18	27 5AM	+	-	+	-	-	7	37.3	38.9	7 watery, mucus	
11	18	27 7AM	-	+	-	-	+	2	/	40.0	4 watery, mucus	

TABLE A



# RESULTS OF STOOL CULTURES

PATIENT	DAY OF ILLNESS													
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	+			-		-			-		-		-	
2		+			-		+		-		-		-	
3	+			-	+	-		-			+		-	-
4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	+	+	-	+	-	-	-	+	-	-	-	-	-	-
6	-	-	-	-	-	+	-	-	-	+	+	-	-	-
7		+	+	+	+	-	+	-	+	+	-	+	+	-
8		-	+	-	-	-	-	-	-	-	-	-	-	-
9	+	+	+	+	+	-	-	-	-	+	-	-	-	-
10	+	+	+	-	-	+	-	-	-	-	-	+	-	-
11	+	-	+	+	-	-	-	-	-	+	+	-	-	-

TABLE B